WHAT IS CLAIMED IS:

1. A laser irradiation apparatus comprising;

a first pulsed laser oscillator for outputting a first pulsed laser beam having a wavelength not longer than that of visible light,

means for shaping the first pulsed laser beam emitted from the first pulsed laser oscillator into a long beam on a surface,

a second laser oscillator for outputting a second laser beam having a fundamental wave,

means for irradiating the second laser beam emitted from the second laser oscillator to the surface so as to overlap with a region irradiated with the first pulsed laser beam, and

means for moving the surface in a first direction relative to the first pulsed laser beam and the second laser beam,

wherein an output of the second laser oscillator is modulated in synchronization with a period of the first pulsed laser beam.

2. A laser irradiation apparatus comprising;

a first pulsed laser oscillator for outputting a first pulsed laser beam having a wavelength not longer than that of visible light,

means for shaping the first pulsed laser beam emitted from the first pulsed laser oscillator into a long beam on a surface,

a second laser oscillator for outputting a second laser beam having a fundamental wave,

means for irradiating the second laser beam emitted from the second laser oscillator to the surface so as to overlap with a region irradiated with the first pulsed laser beam, and

means for moving the surface in a first direction relative to the first pulsed laser beam and the second laser beam,

wherein an output of the laser oscillator is modulated in synchronization with a period of the pulsed laser beam, and

wherein a net energy of the first pulsed laser beam and the second laser beam absorbed in the surface per unit time is controlled to be constant.

3. A laser irradiation apparatus according to Claim 1,

wherein the first pulsed laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, and a gold vapor laser.

4. A laser irradiation apparatus according to Claim 2,

wherein the first pulsed laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$

laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, and a gold vapor laser.

5. A laser irradiation apparatus according to Claim 1,

wherein the second laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser and a helium-cadmium laser.

6. A laser irradiation apparatus according to Claim 2,

wherein the second laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser and a helium-cadmium laser.

7. A laser irradiation apparatus according to Claim 1,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

8. A laser irradiation apparatus according to Claim 2,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

9. A laser irradiation apparatus according to Claim 1,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

10. A laser irradiation apparatus according to Claim 2,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the

surface, is assumed to have a length of W2.

11. A laser irradiation method comprising the steps of;

shaping a first pulsed laser beam having a wavelength not longer than that of visible light into a long beam on a surface, and

moving the surface in a first direction relative to the long beam while irradiating a second laser beam having a fundamental wave into the surface so as to overlap with a region irradiated with the first pulsed laser beam at the same time as the first pulsed laser beam,

wherein the energy of the second laser beam is modulated in synchronization with a pulse oscillation of the first pulsed laser beam.

12. A laser irradiation method comprising the steps of;

shaping a first pulsed laser beam having a wavelength not longer than that of visible light into a long beam on a surface, and

moving the surface in a first direction relative to the long beam while irradiating a second laser beam having a fundamental wave into the surface so as to overlap with a region irradiated with the first pulsed laser beam at the same time as the first pulsed laser beam,

wherein the energy of the second laser beam is modulated in synchronization with a pulse oscillation of the first pulsed laser beam, and

wherein a net energy of the first pulsed laser beam and the second laser beam absorbed in the surface per unit time is controlled to be constant.

13. A laser irradiation method according to Claim 11,

wherein the first pulsed laser beam is emitted from an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, or a gold vapor laser.

14. A laser irradiation method according to Claim 12,

wherein the first pulsed laser beam is emitted from an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, or a gold vapor laser.

15. A laser irradiation method according to Claim 11,

wherein the second laser beam is emitted from an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser or a helium-cadmium laser.

16. A laser irradiation method according to Claim 12,

wherein the second laser beam is emitted from an Ar laser, a Kr laser, a CO_2 laser, a YAG laser,

a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser or a helium-cadmium laser.

17. A laser irradiation apparatus according to Claim 11,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

18. A laser irradiation apparatus according to Claim 12,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

19. A laser irradiation apparatus according to Claim 11,

wherein the surface is a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

20. A laser irradiation apparatus according to Claim 12,

wherein the surface is a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

21. A method for manufacturing a semiconductor device comprising the steps of;

forming a semiconductor film over a substrate,

shaping a first pulsed laser beam having a wavelength not longer than that of visible light into a long beam on a surface of the semiconductor film, and

moving the substrate in a first direction relative to the long beam while irradiating a second laser beam having a fundamental wave into the semiconductor film so as to overlap with a region irradiated with the first pulsed laser beam at the same time as the first pulsed laser beam,

wherein the energy of the second laser beam is modulated in synchronization with a pulse

oscillation of the first pulsed laser beam.

22. A method for manufacturing a semiconductor device comprising the steps of;

forming a semiconductor film over a substrate,

shaping a first pulsed laser beam having a wavelength not longer than that of visible light into a long beam on a surface of the semiconductor film, and

moving the substrate in a first direction relative to the long beam while irradiating a second laser beam having a fundamental wave into the surface of the semiconductor film so as to overlap with a region irradiated with the first pulsed laser beam at the same time as the first pulsed laser beam,

wherein the energy of the second laser beam is modulated in synchronization with a pulse oscillation of the first pulsed laser beam, and

wherein a net energy of the first pulsed laser beam and a second laser beam absorbed in the semiconductor film per unit time is controlled to be constant.

23. A method for manufacturing a semiconductor device according to Claim 21,

wherein the first pulsed laser beam is emitted from an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, or a gold vapor laser.

24. A method for manufacturing a semiconductor device according to Claim 22,

wherein the first pulsed laser beam is emitted from an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, or a gold vapor laser.

25. A method for manufacturing a semiconductor device according to Claim 21,

wherein the second laser beam is emitted from an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser or a helium-cadmium laser.

26. A method for manufacturing a semiconductor device according to Claim 22,

wherein the second laser beam is emitted from an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser or a helium-cadmium laser.

27. A laser irradiation apparatus according to Claim 21,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi \geqq \arctan(W1/2d)$, when a side of the long beam, which is

on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W1.

28. A laser irradiation apparatus according to Claim 22,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi \geqq \arctan(W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W1.

29. A laser irradiation apparatus according to Claim 21,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi 2 \geqq \arctan(W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W2.

30. A laser irradiation apparatus according to Claim 22,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi 2 \geqq \arctan(W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W2.

31. A laser irradiation apparatus comprising;

a first pulsed laser oscillator for outputting a first pulsed laser beam having a wavelength not longer than that of visible light,

a first optical system for shaping the first pulsed laser beam emitted from the first pulsed laser oscillator into a long beam on a surface,

a second laser oscillator for outputting a second laser beam having a fundamental wave,

a second optical system for irradiating the second laser beam emitted from the second laser oscillator to the surface so as to overlap with a region irradiated with the first pulsed laser beam, and

a robot for moving the surface in a first direction relative to the first pulsed laser beam and the second laser beam,

wherein an output of the second laser oscillator is modulated in synchronization with a period of the first pulsed laser beam.

32. A laser irradiation apparatus comprising;

a first pulsed laser oscillator for outputting a first pulsed laser beam having a wavelength not longer than that of visible light,

a first optical system for shaping the first pulsed laser beam emitted from the first pulsed laser oscillator into a long beam on a surface,

a second laser oscillator for outputting a second laser beam having a fundamental wave,

a second optical system for irradiating the second laser beam emitted from the second laser oscillator to the surface so as to overlap with a region irradiated with the first pulsed laser beam, and

a robot for moving the surface in a first direction relative to the first pulsed laser beam and the second laser beam,

wherein an output of the laser oscillator is modulated in synchronization with a period of the pulsed laser beam, and

wherein a net energy of the first pulsed laser beam and the second laser beam absorbed in the surface per unit time is controlled to be constant.

33. A laser irradiation apparatus according to Claim 31,

wherein the first pulsed laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, and a gold vapor laser.

34. A laser irradiation apparatus according to Claim 32,

wherein the first pulsed laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, and a gold vapor laser.

35. A laser irradiation apparatus according to Claim 31,

wherein the second laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser and a helium-cadmium laser.

36. A laser irradiation apparatus according to Claim 32,

wherein the second laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser and a helium-cadmium laser.

37. A laser irradiation apparatus according to Claim 31,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan(W1/2d)$, when a side of the long beam, which is on an incidence plane and on the

surface, is assumed to have a length of W1.

38. A laser irradiation apparatus according to Claim 32,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

39. A laser irradiation apparatus according to Claim 31,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

40. A laser irradiation apparatus according to Claim 32,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

41. A laser irradiation apparatus according to Claim 31,

wherein the first optical system comprises at least one selected from the group consisting of a planoconvex cylindrical lens, a planoconcave cylindrical lens, a kaleidoscope, a spherical lens, a mirror, a galvanometer mirror, a fθ lens, and a converging lens.

42. A laser irradiation apparatus according to Claim 32,

wherein the first optical system comprises at least one selected from the group consisting of a planoconvex cylindrical lens, a planoconcave cylindrical lens, a kaleidoscope, a spherical lens, a mirror, a galvanometer mirror, a fθ lens, and a converging lens.

43. A laser irradiation apparatus comprising;

a first pulsed laser oscillator for outputting a first pulsed laser beam having a wavelength not longer than that of visible light,

a first optical system for shaping the first pulsed laser beam emitted from the first pulsed laser oscillator into a long beam on a surface,

a second laser oscillator for outputting a second laser beam having a fundamental wave,

a second optical system for irradiating the second laser beam emitted from the second laser oscillator to the surface so as to overlap with a region irradiated with the first pulsed laser beam, and

a galvanometer mirror for moving the first pulsed laser beam and the second laser beam in a first direction relative to the surface,

wherein an output of the second laser oscillator is modulated in synchronization with a period of the first pulsed laser beam.

44. A laser irradiation apparatus comprising;

a first pulsed laser oscillator for outputting a first pulsed laser beam having a wavelength not longer than that of visible light,

a first optical system for shaping the first pulsed laser beam emitted from the first pulsed laser oscillator into a long beam on a surface,

a second laser oscillator for outputting a second laser beam having a fundamental wave,

a second optical system for irradiating the second laser beam emitted from the second laser oscillator to the surface so as to overlap with a region irradiated with the first pulsed laser beam, and

a galvanometer mirror for moving the first pulsed laser beam and the second laser beam in a first direction relative to the surface,

wherein an output of the laser oscillator is modulated in synchronization with a period of the pulsed laser beam, and

wherein a net energy of the first pulsed laser beam and the second laser beam absorbed in the surface per unit time is controlled to be constant.

45. A laser irradiation apparatus according to Claim 43,

wherein the first pulsed laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, and a gold vapor laser.

46. A laser irradiation apparatus according to Claim 44,

wherein the first pulsed laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, and a gold vapor laser.

47. A laser irradiation apparatus according to Claim 43,

wherein the second laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser and a helium-cadmium laser.

48. A laser irradiation apparatus according to Claim 44,

wherein the second laser oscillator is selected from the group consisting of an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser and a helium-cadmium laser.

49. A laser irradiation apparatus according to Claim 43,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

50. A laser irradiation apparatus according to Claim 44,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W1.

51. A laser irradiation apparatus according to Claim 43,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

52. A laser irradiation apparatus according to Claim 44,

wherein the surface is on a film formed over a substrate having a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface, is assumed to have a length of W2.

53. A laser irradiation apparatus according to Claim 43,

wherein the first optical system comprises at least one selected from the group consisting of a planoconvex cylindrical lens, a planoconcave cylindrical lens, a kaleidoscope, a spherical lens, a mirror, a galvanometer mirror, a $f\theta$ lens, and a converging lens.

54. A laser irradiation apparatus according to Claim 44,

wherein the first optical system comprises at least one selected from the group consisting of a planoconvex cylindrical lens, a planoconcave cylindrical lens, a kaleidoscope, a spherical lens, a mirror, a galvanometer mirror, a fθ lens, and a converging lens.

55. A method for manufacturing a semiconductor device comprising the steps of;

forming a semiconductor film over a substrate,

shaping a first pulsed laser beam having a wavelength which is absorbed in the semiconductor film into a long beam on a surface of the semiconductor film, and

moving the substrate in a first direction relative to the long beam while irradiating a second laser beam having a fundamental wave into the semiconductor film so as to overlap with a region irradiated with the first pulsed laser beam at the same time as the first pulsed laser beam,

wherein the energy of the second laser beam is modulated in synchronization with a pulse oscillation of the first pulsed laser beam.

56. A method for manufacturing a semiconductor device comprising the steps of;

forming a semiconductor film over a substrate,

shaping a first pulsed laser beam having a wavelength which is absorbed in the semiconductor film into a long beam on a surface of the semiconductor film, and

moving the substrate in a first direction relative to the long beam while irradiating a second laser beam having a fundamental wave into the surface of the semiconductor film so as to overlap with a region irradiated with the first pulsed laser beam at the same time as the first pulsed laser beam,

wherein the energy of the second laser beam is modulated in synchronization with a pulse oscillation of the first pulsed laser beam, and

wherein a net energy of the first pulsed laser beam and a second laser beam absorbed in the semiconductor film per unit time is controlled to be constant.

57. A method for manufacturing a semiconductor device according to Claim 55,

wherein the first pulsed laser beam is emitted from an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, or a gold vapor laser.

58. A method for manufacturing a semiconductor device according to Claim 56,

wherein the first pulsed laser beam is emitted from an Ar laser, a Kr laser, an excimer laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: Sapphire laser, a copper vapor laser, or a gold vapor laser.

59. A method for manufacturing a semiconductor device according to Claim 55,

wherein the second laser beam is emitted from an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser or a

helium-cadmium laser.

60. A method for manufacturing a semiconductor device according to Claim 56,

wherein the second laser beam is emitted from an Ar laser, a Kr laser, a CO_2 laser, a YAG laser, a Y_2O_3 laser, a YVO_4 laser, a YLF laser, a $YAlO_3$ laser, an alexandrite laser, a Ti: Sapphire laser or a helium-cadmium laser.

61. A laser irradiation apparatus according to Claim 55,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W1.

62. A laser irradiation apparatus according to Claim 56,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle ϕ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi \geqq \arctan (W1/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W1.

63. A laser irradiation apparatus according to Claim 55,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W2.

64. A laser irradiation apparatus according to Claim 56,

wherein the substrate has a thickness d transparent to the first pulsed laser beam and the second laser beam, and

wherein an incidence angle $\phi 2$ of the first pulsed laser beam to the surface of the semiconductor film satisfies an inequality $\phi 2 \geqq \arctan (W2/2d)$, when a side of the long beam, which is on an incidence plane and on the surface of the semiconductor film, is assumed to have a length of W2.